

## REMARKS

Claims 1-53 are pending in the application.

Claims 1-16, 18-31, 33-46 and 48-53 stand rejected.

Claims 17, 32, and 47 have been canceled.

Claims 1, 21, 34, 49 & 51 have been amended.

### Allowable Subject Matter

Claims 17, 32, and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Independent claims 1, 21, 34, 49, and 51 have been amended to include the subject matter indicated as being allowable within claims 17, 32, and 47. Accordingly, all of the pending claims are believed to be allowable.

### Objections

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. With respect to the asserted omission of the limitation “wherein a driver for driving signals on the new wire has substantially a same size as a driver for driving signals on the removed one of the one or more wires” from the specification, Applicants have amended paragraph 31 of the specification to include the statement: “Accordingly, the driver for driving signals on a new wire can be substantially the same size as a driver used to drive signals on a removed wire.” Since claim 17 is part of the disclosure, as originally filed, this amendment does not add new matter. See *In re Benno*, 768 F.2d 1340, 226 USPQ 683 (Fed. Cir. 1985) and MPEP 2163.06(III).

### Claim Objections

Claims 1, 21, 34 and 49 are objected to because an application/intended use/purpose should be recited in the preambles of these claims. Office Action, p. 2. As noted in prior

response, there is no legal requirement that a claim include “an application/intended use/purpose” in its preamble and that any such statement within the preamble “is not considered a limitation and is of no significance to claim construction.” MPEP §2111.02, *citing Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). Since the mere inclusion of a purpose or intended use is not required and does not present any claim limitation, Applicants respectfully assert that these claims are proper as presented.

Claims 16, 31 and 46 are objected to because, the limitation “the new (longer) wire has less delay than the wire removed” is a contradicting limitation as to how a longer wire has less delay than a removed (shorter) wire. An example of a scenario in which a longer wire will have less delay than a removed shorter wire is provided in paragraphs 25 and 26 of the specification:

By replacing wire 12D with a longer wire 12K, the timing violation in timing paths 5A and 5B can be eliminated without causing additional timing violations due to crosstalk in other timing paths. In this example, by routing the replacement wire 12K through a higher routing layer, the replacement wire 12K is much less likely to be a crosstalk victim or aggressor with respect to any neighboring wires due to the increased spacing and/or increased wire width of the upper routing layer relative to the lower layer on which wire 12D was routed. Additionally, in situations in which the timing violation arose due to increased delay on wire 12D, the delay of wire 12K may be significantly less than the actual delay of wire 12D even though wire 12K may have a longer delay than wire 12D would have had if wire 12D had not been a crosstalk victim. In many situations, due to wire 12K not experiencing any crosstalk, the delay and/or slew calculated of wire 12K will be less than the delay and/or slew of wire 12D, despite the longer length of wire 12K.

It is noted that replacing a wire with a longer wire in response to detection of a timing violation goes against the conventional teachings of IC design, which focus on minimizing wire lengths in order to minimize delay. In typical solutions, drivers and buffers are modified to correct a timing violation and wire length is left unchanged. However, as noted before, these types of modifications can cause additional timing violations to arise within the IC design. By modifying the wire length, the modification can be isolated and thus additional crosstalk effects may not be propagated to other parts of the IC design. This in turn can reduce the number of iterations of timing analysis and design modification needed to achieve a timing-violation-free design.

Applicants respectfully assert that the corresponding limitation in claims 16, 31, and 46 is clear and definite and is not a contradicting limitation.

Rejection of Claims

Claims 1, 3-16, 18-21, 23-31, 33, 34, 36-46, 48-51 and 53 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Mellen, et al., U.S. Patent No. 6,058,256 (Mellen). Claims 2, 22, 35 and 52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mellen, et al., U. S. Patent No. 6,058,256 (Mellen) in view of one ore more of the prior art of record Beyne, et al., U.S. Patent Publication No. 2003/0060034 (Beyne) and Muddu, et al., U.S. Patent No. 6,353,917 (Muddu). Since independent claims 1, 21, 34, 49, and 51 have been amended to include subject matter indicated as being allowable, Applicants believe that these rejections are moot with respect to the amended claims.

CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5087.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 22, 2006.

Brenna A. Brock 2/22/2006

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